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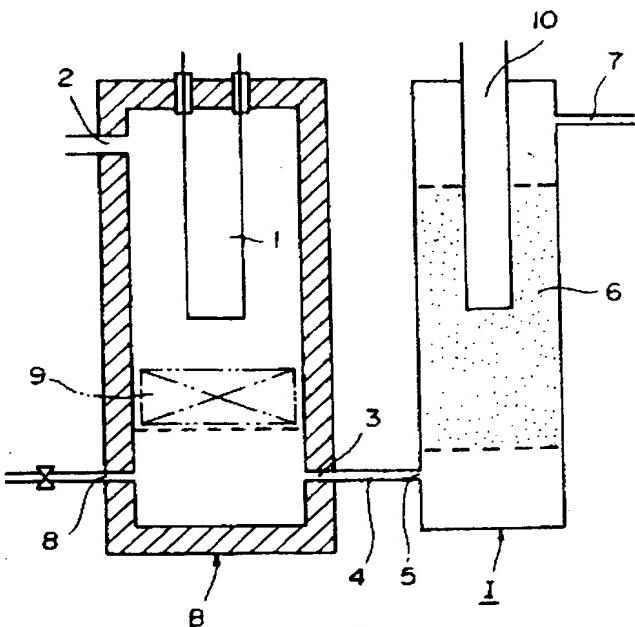
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TITLE : MANUFACTURE OF TRICHLOROSILANE



**ABSTRACT :** PURPOSE: To manufacture  $\text{SiHCl}_3$  in a high yield of starting materials by passing a mixed reactive gas through a metallic Si layer to convert contained harmful HCl into  $\text{SiHCl}_3$  when  $\text{SiHCl}_3$  is manufactured by using  $\text{SiCl}_4$  and  $\text{H}_2$ .

CONSTITUTION:  $\text{SiCl}_4$  is mixed with  $\text{H}_2$  in 4:1~1:10 molar ratio and introduced into the 1st reactor B, and by electrifying a graphite resistance 1, the interior of the reactor B is heated to 500~1,300°C to produce  $\text{SiHCl}_3$  as well as to produce HCl as a by-product in the presence of catalyst 9. This mixed gas contg. the residual unreacted  $\text{SiCl}_4$  and  $\text{H}_2$  is introduced into the 2nd reactor, and while cooling the gas to 200~700°C with a cooling pipe 10 and passing it through a fixed metallic Si bed 6, the HCl is converted into  $\text{SiHCl}_3$  by a reaction with the metallic Si. The resulting mixed gas of  $\text{H}_2$ ,  $\text{SiCl}_4$  and  $\text{SiHCl}_3$  is taken out of the exhaust port 7, and the  $\text{SiHCl}_3$  is separated and collected. Since HCl is not contained, an HCl separator is unnecessary, and HCl is converted into  $\text{SiHCl}_3$  by a reaction with Si to increase the production of  $\text{SiHCl}_3$ .

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